

ADDITIONAL NOTES ON THE ERIOCAULACEAE. XXVII

Harold N. Moldenke

ERIOCAULACEAE Lindl.

Additional & emended bibliography: Lam., *Encycl. Méth. Bot.* 3: 275—276. 1789; R. Br., *Prodr. Fl. Nov. Holl.*, pr. 1, 1: 252—255 (1819) and pr. 2, [*Isis* 1819:] 47—48. 1819; Mart., *Nov. Act. Acad. Leopold.-carol. Nat. Cur.* 17 (1): 1—72, pl. 1—3. 1835; Guill. in Deless., *Icon. Fl. Sel.* 3: 57—61 & 67, pl. 95—98. 1837; Mart., *Flora* 24, *Beih.* 2: 58 & 60. 1841; Benth. in Hook. f., *Niger Fl.* 547—548 & 582. 1849; C. Mull. in Walp., *Ann.* 6: 1170—1171, 1203, & 1245. 1861; Schweinf., *Beitr. Fl. Aethiop.* 295 & 309. 1867; Sauv., *Anal. Acad. Ci. Habana* 7: 715—717 (1871) and 8: 48—50. 1871; Sauv., *Fl. Cub.* 161—165. 1871; Benth. & Hook. f., *Gen. Pl.* 3 (2): 1018—1025, 1238, 1239, 1244—1246, 1249, 1250, 1252, & 1254—1256. 1883; Wawra, *Itin. Princ. Saxo-Coburg.* 2: 96—97, pl. 12. 1888; Ruhl. in Engl., *Bot. Jahrb.* 27: [65]—85. 1899; N. L. Britton, *Man.*, pr. 1, 236—238, 1067, 1068, & 1078 (1901) and pr. 2, 236—238, 1067, 1068, & 1078. 1902; J. K. Small, *Fl. Southeast. U. S.*, ed. 1, 231, 234—236, 1328, 1353, 1358, 1361, 1368, 1382, 1383, 1385, 1388, & 1392. 1903; Usteri, *Beitr. Kenntn. Philip. Veg.* 131. 1905; N. L. Britton, *Man.*, pr. 3, 236—238, 1067, 1068, & 1078 (1905) and pr. 4, 236—238, 1067, 1068, & 1078. 1907; H. Lecomte, *Journ. de Bot.* 21 [sér. 2, 1]: 86—94, [101]—109, & [129]—136, fig. 1—3. 1908; J. K. Small, *Fl. Southeast. U. S.*, ed. 2, 231, 234—236, 1328, 1353, 1358, 1361, 1368, 1382, 1383, 1385, 1388, & 1392. 1913; Britton & Br., *Illustr. Fl.*, ed. 2, pr. 1, 1: xxiii, 453—456, & [678]—680, fig. 1140—1145 (1913) and 3: 574, 575, 581, 597, & 625. 1913; Alv. Silv., *Arch. Jard. Bot. Rio Jan.* 2: 7—8, pl. 1 & 2. 1918; Alv. Silv., *Arch. Mus. Nac. [Brazil]* 23: 159—171, pl. 1—5. 1921; Saunders, *Ann. Bot.* 39: 158. 1925; Haines, *Bot. Bihar & Oris.* 1: 80. 1925; H. N. Ridl., *Fl. Mal. Penins.* 5: 133—136, fig. 218. 1925; Stapf, *Ind. Lond.* 4: 22 & 67. 1930; Ruhl. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 2, 15a: 39—57, 695—698, 700—702, & 704, fig. 16—25. 1930; Steinberg in Komarov & Schischkin, *Fl. U. S. S. R.* 3: 494—498 & 748, pl. 27, fig. 1—5. 1935; Britton & Br., *Illustr. Fl.*, ed. 2, pr. 2, 1: xxiii, 453—456, & [678]—680, fig. 1140—1145 (1936) and 3: 574, 575, 581, 597, & 625. 1936; Worsdell, *Ind. Lond. Suppl.* 2: 28 & 38. 1941; Moldenke in Lundell, *Fl. Texas* 3, pr. 1, 1—9. 1942; Britton & Br., *Illustr. Fl.*, ed. 2, pr. 3, 1: xxiii, 453—456, & [678]—680, fig. 1140—1145 (1943) and 3: 574, 575, 581, 597, & 625. 1943; León, *Fl. Cub.* 1: 278—284 & 426. 1946; Britton & Br., *Illustr. Fl.*, ed. 2, pr. 4, 1: xxiii, 453—456, & [678]—680, fig. 1140—1145 (1947) and 3: 574, 575, 581, 597, & 625. 1947; H. Hess, *Bericht. Schweiz. Bot. Gesell.* 65: 115—204 & 263—271. 1955; F. Herman, *Fl. Nord & Mitteleur.* 215—216. 1956; Hedberg, *Symb. Bot. Upsal.* 15 (1): 60—61 & 263. 1957;

Moldenke, Bot. Mus. Leaflet. Harvard Univ. 18: 124. 1958; Van Royen, Nov. Guin., new ser., 10: [21]—44, fig. 1—5 (1959) and 10: 236. 1960; G. S. Puri, Indian For. Ecol. 1: 293. 1960; Moldenke in Lundell, Fl. Texas 3, pr. 2, 3—9, 445, & 425. 1961; J. D. Montgomery, N. J. Nat. News 18: 122. 1963; Moldenke, Bol. Soc. Venez. Cienc. Nat. 23: 300—301. 1963; Anon., Biol. Abstr. 46: 2131. 1965; Sandoval, Biol. Abstr. 46: 2128. 1965; Van Royen, Nov. Guin. Bot. 14: 467. 1965; Datta & Majumdar, Bull. Bot. Soc. Bengal 20: 38—39. 1966; Anon., Biol. Abstr. 48: 3190. 1967; Dandy, Reg. Veg. 51: 38, 48, & 96. 1967; Tingle, Check List Hong Kong Pl. 54. 1967; M. Sharma, Agra Univ. Journ. Res. Sci. 16: 43—47. 1967; Ellis, Swaminathan, & Chandrabose, Bull. Bot. Surv. India 9: 15. 1967; Joseph & Vajravelu, Bull. Bot. Surv. India 9: 29. 1967; S. K. Jain, Bull. Bot. Surv. India 9: 75—76. 1967; Rao & Kumari, Bull. Bot. Surv. India 9: 110. 1967; Sebastine & Vivekanathan, Bull. Bot. Surv. India 9: 165 & 183. 1967; J. Hutchinson, Keys Fam. Flow. Pl., rev. ed., 104. 1967; Subba Rao & Kumari, Bull. Bot. Surv. India 9: 188—189. 1967; Sebastine & Ellis, Bull. Bot. Surv. India 9: 199. 1967; Kammathy, Rao, & Rao, Bull. Bot. Surv. India 9: 207 & 232—233. 1967; Panigr. & Saran, Bull. Bot. Surv. India 9: 260. 1967; MacKeever, Native & Naturl. Pl. Nantucket 43. 1968; Anon., Dict. Cat. Nat. Agric. Lib. 21: 229. 1968; Wardlaw, Morphogen. 48 & 49, fig. F. 1968; Van Donselaar, Meded. Bot. Mus. Rijksuniv. Utrecht 306: 397 & 402. 1968; Vajravelu, Joseph, & Chandr., Bull. Bot. Surv. India 10: 81. 1968; Inamdar, Bull. Bot. Surv. India 10: 131. 1968; J. L. Ellis, Bull. Bot. Surv. India 10: 159. 1968; Cannon & Bangerter, Proc. Bot. Soc. Brit. Isles 7: 370. 1968; Arora, Bull. Bot. Surv. India 10: 65. 1968; Moldenke, Biol. Abstr. 50: 4449, 6336, 7436, 7996, & 10282. 1969; Jeffrey & Takhtajan, Flow. Pl. 238, 247, 251, & 293. 1969; Merxmüller, Assoc. Etud. Tax. Fl. Afr. Trop. Bull. 20 [Mitt. Bot. Staatssam. Münch. 3]: 26. 1969; G. W. Prescott, How to Know Aquat. Pl. 133, 134, 137, & 164, fig. 146. 1969; Anon., Biol. Abstr. 50: 8564 (1969), 50 (8): BASIC S.64, 141, 149, & 186 (1969), 50 (12): BASIC S.69 (1969), 50 (15): BASIC S.70 (1969), and 50 (19): BASIC S.68 & 194. 1969; Anon., Assoc. Etud. Tax. Fl. Afr. Trop. Index 1968: 24—25. 1969; M. A. Rau, Bull. Bot. Surv. India 10, Suppl. 2: 84. 1969; Hansen & Rahn, Dansk Bot. Ark. 22: 28, 31, 35, 39, & 42. 1969; Lehr, Bull. Torr. Bot. Club 96: 721. 1969; Moldenke, Phytologia 19: 5—46 & 65—109 (1969) and 19: 230—250. 1970.

The name for the order to which this family belongs is spelled "Eriocaulales" in Cronquist, *Evol. & Class. Flow. Pl.* 335 (1968).

It should be noted here that the Sauvalle, *Fl. Cub.* reference given in the bibliography above is often cited as "1868", but, according to the late Dr. J. H. Barnhart, the portion of the work involved here was not actually published until 1871.

Hutchinson (1967) describes the Eriocaulaceae as "Flowers unisexual, monoecious, crowded into small heads; inner perianth-segments often united; ovule solitary, pendulous; perennials or rarely annuals".

BLASTOCAULON Ruhl.

Additional bibliography: Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 40, 41, 46, 48, 52, & 53, fig. 20. 1930; Moldenke, Alph. List Cit. 2: 460 (1948) and 3: 731. 1949; Moldenke, Phytologia 19: 7. 1969; Moldenke, Biol. Abstr. 50: 4149, 7436, & 7996. 1969.

BLASTOCAULON ALBIDUM (Gardn.) Ruhl.

Additional synonymy: Philodice albida Benth. & Hook. f. apud Ruhl. in Engl., Pflanzenreich 13 (4-30): 225, in syn. 1903.

Additional bibliography: Benth. & Hook. f., Gen. Pl. 3 (2): 1023 & 1024. 1883; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 53. 1930; Moldenke, Phytologia 19: 7. 1969.

The combination, Philodice albida, does not actually occur in the Bentham & Hooker reference cited by Ruhl (1903). The combination is only partially suggested there. Bentham & Hooker's actual statement under the genus Philodice is "Genus Paepalantho valde affine, nec habitu nec floribus foemineis a speciebus nonnullis generis istius polymorphi distinguendum. Kornicke genus retinuit ad species 2 limitatum floribus ♂ 2-andris in periantho 3-mero, nobis melius definitum videtur si includimus Paepalanthum albidum et P. rupestrem, Gardn. in Hook. Pl. t. 525, floribus ♂ 3-andris, antheris tamen apertis 1-ocularibus".

BLASTOCAULON PROSTRATUM (Körn.) Ruhl.

Additional bibliography: Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 40 & 53. 1930; Moldenke, Phytologia 18: 242-243. 1969.

BLASTOCAULON RUPESTRE (Gardn.) Ruhl.

Additional bibliography: Benth. & Hook. f., Gen. Pl. 3 (2): 1023 & 1024. 1883; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 52 & 53, fig. 20. 1930; Moldenke, Alph. List Cit. 2: 460 (1948) and 3: 731. 1949; Moldenke, Phytologia 19: 7. 1969.

COMANTHERA L. B. Sm.

Additional bibliography: Moldenke, Phytologia 19: 8. 1969; Moldenke, Biol. Abstr. 50: 4149. 1969.

ERIOCAULON ABYSSINICUM Hochst.

Additional bibliography: Schweinf., Beitr. Fl. Aethiop. 295. 1867; Ruhl. in Engl., Bot. Jahrb. 27: 67, 72, 83, & 84. 1899; H. Hess, Bericht. Schweiz. Bot. Gesell. 65: 160, 165-167, & 270, fig. 2 & 3, pl. 9, fig. 8 & 9. 1955; Moldenke, Phytologia 19: 12 & 42. 1969; Moldenke, Biol. Abstr. 50: 4149 & 6336. 1969.

ERIOCAULON ACHITON Körn.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 68. 1899; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Phytologia 19: 12-13, 42, 44, 85, & 91. 1969;

Moldenke, Biol. Abstr. 50: 7436. 1969; Moldenke, Phytologia 19: 245 & 246. 1970.

ERIOCAULON AFRICANUM Hochst.

Additional & emended bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 67, 70, & 77. 1899; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Alph. List Cit. 3: 700 (1949) and 4: 1014. 1949; H. Hess, Bericht. Schweiz. Bot. Gesell. 65: 266—269, fig. 1 & 5. 1955; Moldenke, Phytologia 19: 13. 1969.

For a detailed discussion of the relationships of this taxon see under E. tofieldifolium Schinz in these notes.

ERIOCAULON AFZELIANUM Wikstr.

Additional bibliography: Körn. in Miq., Prol. Fl. Iap. 328. 1867; Ruhl. in Engl., Bot. Jahrb. 27: 72 & 82. 1899; Moldenke, Phytologia 19: 13. 1969.

ERIOCAULON ALPESTRE Hook. f. & Thoms.

Additional synonymy: Eriocaulon alpestre a typicum Maxim., Diagn. Pl. Nov. Asiat. 8: 24. 1893.

Additional & emended bibliography: Maxim., Diagn. Pl. Nov. Asiat. 8: 7, 16, 20, 21, & 23—27. 1893; Moldenke, Alph. List Cit. 2: 461 (1948) and 4: 998 & 1202. 1949; Moldenke, Phytologia 19: 14, 19, 20, & 90 (1969) and 19: 239, 244, & 246. 1970.

Maximowicz (1893) separated what he regarded as typical E. alpestre from what is now called E. robustius (Maxim.) Mak. by giving the essential characters of the typical E. alpestre as "folia angusta (1,5—2,5 mm. lata) et pauciora scapis 3- (4-) costatis parum v. duplo breviora, capitula minoria 10—15-flora", while for E. robustius he says "Folia latiora (3—7 mm.) et numerosiora scapis 4—5-costatis parum breviora, capitula non-nihil majora 20—50-flora".

ERIOCAULON ALPINUM Van Royen

Additional bibliography: Moldenke, Phytologia 19: 65 & 84. 1969.

This species has been collected at altitudes of 8000 to 11,000 feet, flowering and fruiting in August. Mrs. Clemens found it growing in boggy meadows and wet pools. Brass notes that it is "very abundant and sometimes completely covering boggy ground", while he and Meyer-Drees found it growing "in large cushions on marshy slopes".

ERIOCAULON ANGUSTIFOLIUM Körn.

Additional bibliography: Van Royen, Nov. Guin., new ser., 10: 37 & 44. 1959; Moldenke, Phytologia 19: 15. 1969.

ERIOCAULON ANNAMENSE H. Lecomte

Additional & emended bibliography: H. Lecomte, Not. Syst. 2: 215 & 216 (1912) and 2: 393. 1913; Moldenke, Phytologia 19: 16. 1969.

ERIOCAULON ANTUNESII Engl. & Ruhl.

Additional & emended bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 70 & 76—77. 1899; Moldenke, Phytologia 19: 16. 1969.

The collector cited in a previous installment of these notes as "Winkony" should have been "Winkoun". For additional notes on this species see under E. malaissei Moldenke.

ERIOCAULON ARECHAVALETAE Herter

Emended synonymy: Eriocaulon latifolium Arech., Anal. Mus. Montev. 4 (1): 21. 1902 [not E. latifolium Bong., 1831, nor Nees, 1900, nor J. Sm., 1809].

Additional bibliography: Moldenke, Alph. List Cit. 2: 389 (1948), 3: 671 & 732 (1949), and 4: 1302. 1949; Moldenke, Phytologia 19: 16. 1969.

ERIOCAULON ARENICOLA Britton & Small

Additional bibliography: Moldenke, Alph. List Cit. 1: 64 (1946), 2: 650 (1948), and 4: 1094. 1949; Moldenke, Phytologia 19: 16 & 100. 1969.

ERIOCAULON ARISTATUM H. Hess

Additional bibliography: Moldenke, Phytologia 19: 17. 1969.

Additional citations: ANGOLA: Huila: Welwitsch 2444 (B).

ERIOCAULON ATABAPENSE Moldenke

Additional bibliography: Moldenke, Alph. List Cit. 4: 1078 & 1132. 1949; Moldenke, Phytologia 17: 481. 1969.

The Schultes, Baker, & Cabrera 18274, distributed as E. atabapense in some herbaria, is the type collection of E. vaupesense Moldenke.

ERIOCAULON ATRATUM Körn.

Additional & emended bibliography: Thwaites & Hook. f., Enum. Pl. Zeyl., pr. 1, 341. 1864; Ruhl. in Engl., Bot. Jahrb. 27: 66. 1899; Thwaites & Hook. f., Enum. Pl. Zeyl., pr. 2, 341. 1964; Moldenke, Phytologia 19: 17--18. 1969.

The E. atratum accredited to Nakai is actually a synonym of E. atrum Nakai, while the homonym attributed to Thwaites belongs in the synonymy of E. subglaucum Ruhl.

ERIOCAULON ATRATUM var. MAJOR Thwaites

Emended synonymy: Eriocaulon caulescens Hook. f. & Thoms. ex Thwaites & Hook. f., Enum. Pl. Zeyl., pr. 1, 341, in syn. 1864 [not E. caulescens Poir., 1813, nor Willd., 1863].

Additional & emended bibliography: Thwaites & Hook. f., Enum. Pl. Zeyl., pr. 1, 341 (1864) and pr. 2, 341. 1964; Moldenke, Phytologia 19: 17--18. 1969.

ERIOCAULON ATRUM Nakai

Emended synonymy: Eriocaulon atratum Nakai ex Moldenke, Phytologia 17: 390, in syn. 1969 [not E. atratum Körn., 1856, nor

Thwaites, 1864].

Additional & emended bibliography: Moldenke, Alph. List Cit. 4: 1168. 1949; Moldenke, Phytologia 19: 18. 1969.

The E. atratum Körn., referred to in the synonymy above, is actually a valid species, but the homonym accredited to Thwaites is a synonym of E. subglaucum Ruhl.

ERIOCAULON AUSTRALE R. Br.

Additional & emended bibliography: R. Br., Prodr. Fl. Nov. Holl., pr. 1, 1: 254 (1810) and pr. 2, [Isis 1819:] 47. 1819; Körn., Linnaea 27: 686. 1856; Maxim., Diagn. Pl. Nov. Asiat. 8: 7 & 27. 1893; Fyson, Journ. Indian Bot. 2: 320. 1921; Moldenke, Alph. List Cit. 2: 456, 457, & 461 (1948), 3: 892 (1949), and 4: 1205. 1949; Tingle, Check List Hong Kong Pl. 54. 1967; Moldenke, Phytologia 19: 66--67. 1969.

This taxon, if one may judge from specimens so identified in herbaria, is very similar in appearance to E. sexangulare L. and E. willdenovianum Moldenke. According to Ruhland (1903), however, E. australe is trimerous. If this is true, then it could be conspecific with E. sexangulare, but not with the dimerous E. willdenovianum. Ruhland says that in E. australe "Flores normaliter, staminibus raro abortu oligomeris exceptis, evoluti. Perigonia semper homio [3-]mera", while in E. sexangulare "Flores partim modo trimeri, saepe \pm reducti".

Fyson (1921) says for E. australe "closely allied to E. sexangulare L., being similar in the head and the female sepals" and cites a specimen from China in the Calcutta herbarium.

Maximowicz (1893) cites Hance s.n. from Hongkong and Sampson s.n. from Canton. He avers that it differs from what he calls E. wallichianum Mart. [now regarded as E. sexangulare L.] in the following respects: "Ab E. Wallichiano differt foliis angustioribus pilosis, capitulo primum hemisphaerico, tum e basi truncata globosis nonnihil minoribus et pallidioribus, floribus minoribus (2,25 mm. nec 3 mm. longis), bracteis floralibus late obovatis acutiusculis apice incurvis (neque cuneatis), perigonii σ interioris laciniis linearibus apice fimbriatis glandula infraapicali distinctissima oblonga nigra (nec deltoideis glabris glandula minuta punctiformi), perigonii φ externi phyllis apice breve pubescentibus (neque glabris), interioris in utraque specie (contra Koernickeum) exterius subaequantis, phyllis spongiosis apice dense fimbriatis cum glandula infraapicali lineari distinctissima (nec obsoleta phyllis albis pellucidis), ovario distincte (nec vix) stipitato."

The Brass 5751 & 5752 cited by Van Royen (1959) are E. willdenovianum Moldenke. Tingle (1967) records E. australe from Hongkong and reports the common name "hairy pipewort" for it there, a name applied in the United States to Lachnocaulon anceps (Walt.) Morong. It is more probable, however, that his record applies rather to the common E. sexangulare L.

ERIOCAULON BAURI N. E. Br.

Emended synonymy: Eriocaulon baurii N. E. Br. apud Ruhl. in Engl., Bot. Jahrb. 27: 70, 77, & 78. 1899.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 70, 77, & 78. 1899; Moldenke, Phytologia 18: 79. 1969.

ERIOCAULON BEAUVERDI Moldenke

Additional bibliography: Moldenke, Alph. List Cit. 2: 365 & 533 (1948), 3: 669 & 815 (1949), and 4: 1301. 1949; Moldenke, Phytologia 19: 19. 1969.

ERIOCAULON BENTHAMII Kunth

Additional bibliography: Moldenke, Alph. List Cit. 1: 261 (1946), 2: 539, 540, & 639 (1948), and 3: 768 & 831. 1949; Moldenke, Phytologia 19: 19 & 43. 1969.

ERIOCAULON BIFISTULOSUM Van Heurck & Muell.-Arg.

Additional & emended bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 69, 74, & 75. 1899; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Alph. List Cit. 3: 747 (1949) and 4: 1158. 1949; Moldenke, Phytologia 19: 14, 19-20, 78, 97, & 98 (1969) and 19: 234, 236, 237, & 244. 1970.

ERIOCAULON BILOBATUM Morong

Additional bibliography: Moldenke, Alph. List Cit. 2: 351, 370, 459, & 461 (1948), 3: 829, 830, & 973 (1949), and 4: 1238. 1949; Moldenke, Phytologia 19: 20 & 95. 1969.

ERIOCAULON BOMBAYANUM Ruhl.

Additional bibliography: Fyson, Journ. Indian Bot. 2: 320. 1921; Moldenke, Phytologia 18: 169. 1969.

ERIOCAULON BONGENSE Engl. & Ruhl.

Additional & emended bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 69 & 75. 1899; Moldenke, Phytologia 19: 20. 1969.

Emended citations: SÉNÉGAL: Winkoun 2 (Rf).

ERIOCAULON BRACHYPEPLON Körn.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 66. 1899; Moldenke, Phytologia 19: 67. 1969.

ERIOCAULON BREVIPEDUNCULATUM Merr.

Additional synonymy: Eriocaulon brevipedunculata Merr., in herb.

Additional bibliography: Moldenke, Phytologia 19: 65, 67, & 71. 1969.

ERIOCAULON BROWNIANUM Mart.

Additional & emended bibliography: Thwaites & Hook. f., Enum. Pl. Zeyl., pr. 1, 341. 1864; Moldenke, Alph. List Cit. 2: 461 (1948) and 4: 1102 & 1220. 1949; Thwaites & Hook. f., Enum. Pl.

Zeyl., pr. 2, 341. 1964; Sebastine & Vivekanathan, Bull. Bot. Surv. India 9: 165 & 183. 1967; Moldenke, Phytologia 19: 21-22. 1969.

ERIOCAULON BRUNONIS Britten

Additional & emended bibliography: R. Br., Prodr. Fl. Nov. Holl., pr. 1, 1: 255 (1810) and pr. 2, [Isis 1819:] 48. 1819; Kunth, Enum. Pl. 3: 568. 1841; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Alph. List Cit. 2: 456, 457, & 459 (1948), 3: 932 & 969 (1949), and 4: 988, 1119, 1175, & 1205. 1949; Van Royen, Nov. Guin., new ser., 10: 38 & 43. 1959; Moldenke, Phytologia 19: 22 & 92. 1969.

The Chapelier s.n., distributed as E. scariosum R. Br., is actually E. willdenovianum Moldenke.

ERIOCAULON BUCHANANTII Ruhl.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 68, 72, & 83. 1899; Moldenke, Alph. List Cit. 2: 424 & 461 (1948) and 3: 977. 1949; Moldenke, Phytologia 19: 22 (1969) and 19: 246. 1970.

ERIOCAULON BUERGERIANUM Körn.

Additional bibliography: Körn. in Miq., Prodr. Fl. Iap. 327-328. 1867; Miq., Cat. Mus. Lugd. Bat. 108. 1870; Maxim., Diagn. Pl. Nov. Asiat. 8: 7 & 20-21. 1893; Moldenke, Alph. List Cit. 2: 634 (1948), 3: 659 & 702 (1949), and 4: 1011, 1178, & 1288. 1949; Moldenke, Phytologia 19: 22-23. 1969.

In a previous installment of these notes I stated that Kawakami 431 is not E. buergerianum. However, the University of California specimen of this number definitely is this species. It was originally distributed as E. pachypetalum Hayata, then changed to E. pterospermum Hayata; it is also not E. sexangulare L., as has been suggested.

Maximowicz (1893) cites Henry 37 & 2767 from Hupeh, Shearer s.n. from Kenkiang, Makino s.n. from Shikoku, Savatier 1361 from Jokoska, Siebold s.n. from Kiushu, and Tashiro s.n. from Oshina. He records the Japanese vernacular name, "ō hoshikusa". He comments that "Spec. chinense Sheareri ceterum congruum in capitulo uno quod dissecavi capsulas omnes 1-loculares stigmatē 1 et perigonia exteriora glabriuscula habet, ideo subdubium videtur".

Additional citations: FORMOSA: Kawakami 431 (Ca--344947).

ERIOCAULON CANDIDUM Moldenke

Additional bibliography: Moldenke, Phytologia 17: 486-487. 1969.

This species has been collected in flower and fruit in November.

Additional citations: BRAZIL: Rio Grande do Sul: J. Vidal IV. 174 (Ca--1114714), IV.336 (Ca--1169423).

ERIOCAULON CARSONI F. Muell.

Additional bibliography: Van Royen, Nov. Guin., new ser., 10: 41. 1959; Moldenke, Phytologia 19: 23, 81, & 98. 1969.

ERIOCAULON CEYLANICUM Körn.

Additional bibliography: Moldenke, Alph. List Cit. 2: 626. 1948; Moldenke, Phytologia 19: 24. 1969.

ERIOCAULON CINEREUM R. Br.

Additional synonymy: Ericaulon sieboldianum Siebert & Zuccarini apud Van Royen, Nov. Guin., new ser., 10: 25, in syn. 1959. Ericaulon cinerum R. Br. apud Joseph & Vajravelu, Bull. Bot. Surv. India 9: 29, sphalm. 1967.

Additional & amended bibliography: R. Br., Prodr. Fl. Nov. Holl., pr. 1, 1: 254 (1810) and pr. 2, [Isis 1819:] 48. 1819; Körn. in Miq., Prol. Fl. Iap. 326. 1867; Miq., Cat. Mus. Lugd. Bat. 109. 1870; Maxim., Diagn. Pl. Nov. Asiat. 8: 6, 10, 12-13, & 18. 1893; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Alph. List Cit. 2: 460, 461, 490, 492, 529, 618, 625, & 634 (1948), 3: 707, 715, 727, 879, 892, 972, 973, & 977 (1949), and 4: 985, 1011, 1102, 1128, 1145, 1148, 1178, 1189, 1201, 1206, 1210, 1221, 1261, & 1288. 1949; Datta & Majumdar, Bull. Bot. Soc. Bengal 20: 39. 1966; Tingle, Check List Hong Kong Pl. 54. 1967; Joseph & Vajravelu, Bull. Bot. Surv. India 9: 29. 1967; S. K. Jain, Bull. Bot. Surv. India 9: 76. 1967; Panigr. & Saran, Bull. Bot. Surv. India 9: 260. 1967; Vajravelu, Joseph, & Chandr., Bull. Bot. Surv. India 10: 81. 1968; M. A. Rau, Bull. Bot. Surv. India 10, Suppl. 2: 84. 1969; Moldenke, Phytologia 19: 67, 70, & 78 (1969) and 19: 234, 236, 238, 243, 244, & 246. 1970.

Tingle (1967) regards E. cinereum R. Br. and E. sieboldianum Sieb. & Zucc. as distinct species and records the common names "gray pipewort" and "Siebold's pipewort" for them, respectively, in Hongkong. Vajravelu & his associates (1968) cite J. Joseph 17786 from Kerala, India, as representing E. cinereum.

Van Royen (1959) not only spells the first of the synonyms listed above in a different manner from the way it was spelled by Steudel in the reference given by Van Royen, but he also cites an incorrect page number ("273" instead of 272) and an incorrect first author ("Siebert" instead of Philipp Franz Jonkheer von Siebold, 1795-1866). Steudel's original entry reads "sieboldtiamm Sieb. Zucc."

It should be noted here that the Angolan E. stuhlmanni N. E. Br., reduced by Ruhland to synonymy under this species, seems not to belong here. Examination of type material leads me to believe that it is a distinct taxon, which see in these notes. The variant spelling, E. stühlmannii N. E. Br., should, of course, also be removed from the synonymy of E. cinereum.

Jain (1967) records the species from Rajasthan and claims that it has "north African affinity"; Joseph & Vajravelu (1967) cite no. 14453 from Madhya Pradesh, India, while Panigr. & Saran (1967) record it from Uttar Pradesh.

Maximowicz (1893), under E. heteranthum Benth., cites Sampson & Hance s.n. from Canton, and notes "A Bentham (Fl. Austral. VII, 193) ad E. cinereum R. Br. ductum, sed Schultzii n. 368 huc ductus habitu diversus est et capitula minuta habet, alia vero specc. australiensia non vidi, quam ob causam hic distinctum servavi".

The Loher 6987, cited below, is a mixture with E. zollingerianum Körn. The Chiao s.n. [Herb. Univ. Nanking 22344], Karta 317, and Toroos 4572 & 5024, distributed as E. cinereum, are actually E. truncatum Hamilt.

Additional & emended citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon: Loher 1605 (W--389002). Island undetermined: Loher 6987, in part (W--713809).

ERIOCAULON COLLINUM Hook. f.

Additional bibliography: Sebastine & Vivekanathan, Bull. Bot. Surv. India 9: 165 & 183. 1967; Kammathy, Rao, & Rao, Bull. Bot. Surv. India 9: 232. 1967; Moldenke, Phytologia 19: 11, 24, & 27. 1969.

Sebastine & Vivekanathan (1967) report this species as "common" at 2067 meters altitude in Kerala, India, flowering in April, and cite Subramanyam 10241, while Kammathy & his associates (1967) cite Barnes s.n. from Mysore, flowering in June.

ERIOCAULON COMPRESSUM Lam.

Additional synonymy: Eriocaylon compressum Lam. ex Moldenke, Alph. List Cit. 1: 29 & 293, sphalm. 1946.

Additional & emended bibliography: Sauv., Anal. Acad. Ci. Habana 8: 48. 1871; Sauv., Fl. Cub. 163. 1871; N. L. Britton, Man., pr. 1, 237 (1901), pr. 2, 237 (1902), pr. 3, 237 (1905), and pr. 4, 237. 1907; Britton & Br., Illustr. Fl., ed. 2, pr. 1, 1: 454, fig. 1142. 1913; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 44. 1930; Britton & Br., Illustr. Fl., ed. 2, pr. 2, 1: 454, fig. 1142 (1936), pr. 3, 1: 454, fig. 1142. 1943; Moldenke, Alph. List Cit. 1: 7, 15-17, 23, 24, 29, 33, 34, 41, 42, 45, 74, 89, 90, 98, 103, 113, 115, 116, 120, 124, 129, 138-140, 151, 153, 164, 174, 175, 195, 205, 211, 226, 234, 239, 240, 245, 248, 249, 253, 257, 276, 279, 280, 282, 284, 285, & 290-296. 1946; Britton & Br., Illustr. Fl., ed. 2, pr. 4, 1: 454, fig. 1142. 1947; Moldenke, Alph. List Cit. 2: 361, 405, 406, 409, 412, 454, 459, 461, 473, 476, 478-480, 492, 493, 496, 507, 511, 512, 514, 524, 526, 530, 536, 545, 554, 559, 568, 572, 588, 610, 632, 639, & 643 (1948), 3: 660, 697, 698, 721, 742-744, 750, 755, 774, 776, 777, 789, 790, 794, 841, 850-852, 857, 884, 892, 898, 899, 931, 936, 939, 941-946, 958, 964, & 972 (1949), and 4: 985, 991, 1001-1003, 1015, 1077, 1081, 1099, 1102, 1111, 1112, 1118, 1135, 1138, 1145, 1173, 1176, 1177, 1179-1181, 1188, 1192, 1201, 1202, 1211, 1214, 1216, 1222, 1225, 1227, 1238, 1244, 1288, & 1293. 1949; J. D. Montgomery, N. J. Nat. News 18: 122. 1963; Moldenke, Biol. Abstr. 50: 4149 & 6336. 1969; Moldenke, Phytologia 19: 27-28, 32, 105, & 109 (1969) and 19: 232. 1970.

Additional & emended illustrations: Britton & Br., *Illustr. Fl.*, ed. 2, pr. 1, 1: 454, fig. 1142 (1913), pr. 2, 1: 454, fig. 1142 (1936), pr. 3, 1: 454, fig. 1142 (1943), and pr. 4, 1: 454, fig. 1142. 1947.

The Sauvalle, Fl. Cub. reference cited above is sometimes dated "1868" by authors, but, according to the late Dr. J. H. Barnhart, the portion of the work concerned here was not issued until 1971. The plant referred to in both Sauvalle references is actually *E. pseudocompressum* Ruhl.

Tomlinson found *E. compressum* "in scrub cypress" and "in sandy pineland, plants mostly solitary in damper places, some seen submerged in swampy parts", while Gillis found it "in bog with standing water, flowers white, dominant".

The *G. L. Fisher s.n.* [Nome, Apr. 27, 1938], distributed as *E. compressum*, is actually *E. texense* Körn.

Additional citations: FLORIDA: Collier Co.: Tomlinson 31-3-63 C (Ft--279). Monroe Co.: Tomlinson 29-1-63 A (Ft--280, Ft--280, Ft--280). Polk Co.: Gillis 6464 (Ft--2707). County undetermined: *J. K. Small s.n.* [Daphne, April 22, 1921] (N). TEXAS: Houston Co.: *E. J. Palmer 13185* (B).

ERIOCAULON COMPRESSUM var. HARPERI Moldenke

Additional bibliography: Moldenke, *Alph. List Cit.* 1: 17, 23, 24, 29, 41, 226, 257, 290, & 291 (1946), 2: 632 (1948), 3: 742, 939, 943, & 944 (1949), and 4: 1003, 1201, & 1227. 1949; Moldenke, *Phytologia* 18: 80 & 83. 1969; Moldenke, *Biol. Abstr.* 50: 6336. 1969.

ERIOCAULON CRASSISCAPUM Bong.

Additional & emended bibliography: Ruhl. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 2, 15a: 43 & 48, fig. 16 E & F & 17. 1930; Moldenke, *Alph. List Cit.* 4: 1209. 1949; Moldenke, *Phytologia* 19: 29. 1969.

Emended illustrations: Ruhl. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 2, 15a: 43 & 48, fig. 16 E & F & 17. 1930.

ERIOCAULON CRISTATUM Mart.

Additional & emended bibliography: Benth., *Fl. Hongk.* 382. 1861; Thwaites & Hook. f., *Enum. Pl. Zeyl.*, pr. 1, 341. 1864; Maxim., *Diagn. Pl. Nov. Asiat.* 8: 6, 14, & 22. 1893; Moldenke, *Alph. List Cit.* 4: 1288. 1949; Tingle, *Check List Hong Kong Pl.* 54. 1957; Thwaites & Hook. f., *Enum. Pl. Zeyl.*, pr. 2, 341. 1964; Moldenke, *Phytologia* 19: 23, 29--30, & 75. 1969.

Tingle (1967) records this species from Hongkong and calls it the "crested pipewort", but it is most probably var. *brevicalyx* C. H. Wright to which he is here referring.

Thwaites & Hooker (1864) describe but do not name a variety as follows: "var. *bracteis floralibus denticulatis et longiuscule cuspidato-acuminatis*. C.P. 789. Hab. Rambodde, in the Central Province, Gardner. This may possibly be a distinct species. The

flowers are monoecious, and the flower bracts are different in shape from those of the ordinary form of E. cristatum; but the two plants are so conformable in other respects that I cannot venture to separate them."

ERIOCAULON CUBENSE Ruhl.

Additional bibliography: Moldenke, Alph. List Cit. 1: 186. 1946; Moldenke, Phytologia 17: 497. 1969.

ERIOCAULON CUSPIDATUM Dalz.

Additional & emended bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 68. 1899; Fyson, Journ. Indian Bot. Soc. 2: 317--318 & 320, pl. 38. 1921; Arora, Bull. Bot. Surv. India 10: 65. 1968; Moldenke, Phytologia 19: 30. 1969.

Arora (1968) reports this plant as common in sandy wet soil of running streams in India and cites Arora 686h.

ERIOCAULON DALZELII Körn.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 66, 69, & 75. 1899; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Alph. List Cit. 3: 813 (1949) and 4: 1099 & 1128. 1949; Moldenke, Phytologia 19: 30. 1969.

ERIOCAULON DECANGULARE L.

Additional synonymy: Eriocaulon villosum Willd. ex Körn., Linnaea 27: 596, in syn. 1856 [not E. villosum Ell., 1968, nor Michx., 1803, nor Salzm., 1855].

Additional & emended bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 277. 1855; Körn., Linnaea 27: 596. 1856; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 878 & 879 (1893) and 2: 681 & 1021. 1895; Ruhl. in Engl., Bot. Jahrb. 27: 73. 1899; N. L. Britton, Man., pr. 1, 237 (1901), pr. 2, 237 (1902), pr. 3, 237 (1905), and pr. 4, 237. 1907; Britton & Br., Illustr. Fl., ed. 2, pr. 1, 1: 455, fig. 1143. 1913; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 39 & 49. 1930; Britton & Br., Illustr. Fl., ed. 2, pr. 2, 1: 455, fig. 1143 (1936) and pr. 3, 1: 455, fig. 1143. 1943; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 878 & 879 (1946) and 2: 681 & 1021. 1946; Moldenke, Alph. List Cit. 1: 7, 13, 15, 24, 25, 33, 35, 37, 38, 42, 43, 45, 49, 55, 59--61, 79, 80, 99, 103, 112, 115--117, 120, 124, 125, 128, 137--140, 152, 153, 160, 165, 166, 175--177, 199, 200, 205, 239, 240, 242, 245, 248--250, 253, 257, 258, 269, 278--280, 283, 285, 287, & 291--296. 1946; Britton & Br., Illustr. Fl., ed. 2, pr. 4, 1: 455, fig. 1143. 1947; Moldenke, Alph. List Cit. 2: 358, 361, 455, 456, 460, 461, 473, 475, 476, 480, 491--493, 496, 507, 524, 529, 530, 536, 543, 545, 548, 554, 555, 576, 588, 604, 609, 614, 617, 632, 639, & 641 (1948), 3: 656, 660, 668, 671, 699, 709, 720--722, 738, 741, 742, 745, 749, 750, 753, 759, 760, 774, 776--778, 783, 789, 794, 800, 805--807, 813, 824, 835, 841, 850, 851, 856, 869, 880, 884, 898, 899, 911, 916, 926, 927, 931, 936, 937, 939, 942, 943, 948, 964, 972, & 977 (1949), and 4: 986, 990, 991, 993, 998,

1002--1004, 1014, 1085, 1086, 1095, 1105, 1107, 1114, 1115, 1117-1119, 1132, 1135, 1137, 1138, 1170, 1176--1179, 1198, 1200--1202, 1210, 1212, 1220, 1222, 1225--1227, 1231, 1235, 1239, 1243, 1252, 1255, & 1291. 1949; *Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 878 & 879 (1960) and 2: 681 & 1021. 1960; Moldenke, Biol. Abstr. 50: 4449 & 6336. 1969; Moldenke, Phytologia 19: 27, 28, 31--33, 70, 75, 105, & 109 (1969) and 19: 230, 232, 238, & 244. 1970.*

Additional & emended illustrations: *Britton & Br., Illustr. Fl., ed. 2, pr. 1, 1: 455, fig. 1143 (1913), pr. 2, 1: 455, fig. 1143 (1936), pr. 3, 1: 455, fig. 1143 (1943), and pr. 4, 1: 455, fig. 1143. 1947.*

According to *Körnicker (1856) Willdenow's E. villosum* is based on *Herb. Willdenow "2364, fol. 3 (v.s.), nec Mich."* It should be noted here that the *E. villosum* accredited to *Elliot* and to *Michaux* are both synonyms of *Lachnocaulon anceps* (*Walt.*) *Morong*, while the homonym credited to *Salzmann* belongs in the synonymy of *Paepalanthus bifidus* (*Schrad.*) *Kunth*.

Rafinesque's original description (1840) of his E. longifolium is "fol. gramineis longissimis pedalis latiusculis obtusis, scapis fol. saepe breviorib. usque ad medium vaginatis, apice contortis costatis, capit. depressis, bract. ovatis acutis scariosis fulvis pubens -- South New Jersey in swamps, leaves pedal, scapes slender rigid, heads small, fl. pale."

Fernald & Long report *E. decangulare* from sandy and peaty shores in Virginia.

The following specimens have been regarded as typical *E. decangulare* L. by *Kral* and were so cited by me previously, but are now regarded by me as representing *E. decangulare* var. *minor*, which see: *F. A. Barkley 13543* (type) & *13556*, *Herb. Zuccarini s.n. [Texas], Kral 17208*, *Rowell 8050 & 8071*, and *Tharp 4434c*, *4434d*, & *44344b*. The following collections were also regarded as typical *E. decangulare* by me previously, but are now cited by me under *E. decangulare* f. *parviceps*, which see: *F. A. Barkley 13034*, *Correll & Correll 12516*, *E. Hall 675* [cited as "635" in *Phytologia 1: 315*], *Painter & Barkley 13540*, *Rowell 8136*, *Tharp 44342* (type), and *Webster & Wilbur 3199*. The *H. Gentry 2481*, distributed as *E. decangulare*, is herein cited as *E. texense* *Körn.* *Tomlinson 10-6-63* *E* is *E. decangulare* var. *latifolium* *Chapm.*

Additional citations: VIRGINIA: *Sussex Co.: Fernald & Long 14923* (N). FLORIDA: *Flagler Co.: R. W. Read 1047* (Ft--278, Ft--278).

ERIOCAULON DECANGULARE var. LATIFOLIUM Chapm.

Additional bibliography: *Moldenke, Alph. List Cit. 1: 285 (1946) and 3: 806. 1949; Moldenke, Phytologia 19: 33. 1969.*

Tomlinson found this variety growing in wet ditches, flowering

and fruiting in June, and comments that it is "the largest of Florida's eriocauloids". He identified it as typical E. decangulare L.

Additional citations: FLORIDA: Highlands Co.: Tomlinson 10-6-63 (Ft--281, Ft--281, Ft--281, Ft--281).

ERIOCAULON DECANGULARE var. MINOR Moldenke

Additional bibliography: Moldenke, Phytologia 19: 32 & 33. 1969.

Recent collectors have found this variety growing "in moist places of bog proper", flowering in April and fruiting in June.

Additional citations: TEXAS: Leon Co.: F. A. Barkley 13556 (Au, Ca--841811, N). Milam Co.: Tharp 4434c (Au, Au, N), 4434d (N), 44344b (N, Ok). Robertson Co.: Rowell 8050 (N).

ERIOCAULON DECANGULARE f. PARVICEPS Moldenke, f. nov.

Haec forma a forma typica speciei capitulis maturis usque ad 8 mm. latis 6 mm. altis recedit.

This form of the species differs from the typical form in having its mature fruiting heads only to about 8 mm. wide and 6 mm. high. The entire plant is also usually smaller and the leaves are shorter, narrower, and less firm in texture than in the typical form.

The type of the form was collected by Benjamin Carroll Tharp (no. 44342) in Newton County, Texas, on July 23, 1939, and is deposited in the Britton Herbarium at the New York Botanical Garden.

Webster & Wilbur describe the flower-heads as "whitish" and the plant as "common in low moist areas in woods of longleaf pine and some hardwoods with open grassy areas", Rowell found it "in very moist peaty sand of bogs", Painter & Barkley, as well as Hall, found it in bogs, while Barkley alone says that it grows "in bogs, in streams, and in water pools in bogs". It has been collected in flower and fruit from June to August. Material has been identified and distributed in herbaria as E. decangulare L. and E. texense Körn. E. Hall 675 has been cited by me in a previous publication as "635" because the handwritten number on the Britton Herbarium specimen is very difficult to read.

Citations: TEXAS: Hempstead Co.: E. Hall 675 (N, Pa, Po--119240, Pr, Ur). Jasper Co.: Correll & Correll 12516 (N, Rf). Newton Co.: Tharp 44342 (Au--isotype, N--type). Robertson Co.: F. A. Barkley 13034 (Al, N, N); Painter & Barkley 13540 (Gg--321530, N, N); Rowell 8136 (N). Tyler Co.: Webster & Wilbur 3199 (N, W--2067946).

ERIOCAULON DECEMFLORUM Maxim.

Additional & emended bibliography: Maxim., Diagn. Pl. Nov. Asiat. 8: 5 & 7--9. 1893; Moldenke, Alph. List Cit. 2: 618. 1948; Moldenke, Phytologia 19: 33--34. 1969.

Maximowicz (1893) cites the type of this species as follows: "Nippon media (Tschonoski, 1866 fl. frf.)," and comments "Cum se-

quente [E. nipponicum Maxim.] inter Dimera seriam propriam capitulis radiantibus constituit, ceterum habitu proprio gaudens, e longinquo tantum E. stellulato Kvern. subsimile."

ERIOCAULON DEIGHTONII Meikle

Additional bibliography: Moldenke, *Phytologia* 19: 34. 1969; Anon., *Assoc. Stud. Tax. Fl. Afr. Trop. Index* 1968: 24. 1969.

ERIOCAULON DEPRESSUM R. Br.

Additional & emended bibliography: R. Br., *Prodr. Fl. Nov. Holl.*, pr. 1, 1: 255 (1810) and pr. 2, [*Isis* 1819:] 48. 1819; Moldenke, *Phytologia* 19: 67 & 68. 1969.

ERIOCAULON DESLANDESII Alv. Silv.

Additional bibliography: Moldenke, *Phytologia* 19: 34. 1969.

This species has been collected in flower and fruit in December.

Additional citations: BRAZIL: Rio Grande do Sul: J. Vidal IV. 409 (Ca--1169393).

ERIOCAULON DIANAE Fyson

Additional synonymy: Eriocaulon dianea Fyson apud Joseph & Vajravelu, *Bull. Bot. Surv. India* 9: 29, sphalm. 1967.

Additional bibliography: Joseph & Vajravelu, *Bull. Bot. Surv. India* 9: 29. 1967; Inamdar, *Bull. Bot. Surv. India* 10: 131. 1968; Moldenke, *Phytologia* 19: 35 (1969) and 19: 246. 1970.

Inamdar (1968) records this species from Gujarat, India.

ERIOCAULON DIANAE var. RICHARDIANUM Fyson

Additional synonymy: Eriocaulon dianea var. richardiana Fyson apud Joseph & Vajravelu, *Bull. Bot. Surv. India* 9: 29, sphalm. 1967.

Additional bibliography: Joseph & Vajravelu, *Bull. Bot. Surv. India* 9: 29. 1967; Moldenke, *Phytologia* 19: 36. 1969.

Joseph & Vajravelu (1967) cite their no. 13482 from Madhya Pradesh, India.

ERIOCAULON DICLINE Maxim.

Synonymy: Eriocaulon species incerta Miq., *Cat. Mus. Lugd. Bat.* 109. 1870. Eriocaulon sp. incerta Miq. apud Maxim., *Diagn. Pl. Nov. Asiat.* 8: 21, in syn. 1893.

Additional & emended bibliography: Miq., *Cat. Mus. Lugd. Bat.* 109. 1870; Maxim., *Diagn. Pl. Nov. Asiat.* 8: 7 & 21--22. 1893; Moldenke, *Phytologia* 19: 36. 1969.

Maximowicz (1893) cites the type of this species as "E. sp. incerta Miq. *Cat. L. Bat.* 109. K. 1. Japonia (Herb. Lugd. Bat.)" He comments that "Structura perigonii interni fere E. cristati Mart., sed externum in hoc triphyllum".

ERIOCAULON DICTYOPHYLLUM Körn.

Additional bibliography: Moldenke, Alph. List Cit. 3: 849. 1949; Moldenke, Phytologia 19: 36. 1969.

ERIOCAULON DREGETI Hochst.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 71 & 81. 1899; Moldenke, Phytologia 19: 37. 1969.

ERIOCAULON EBERHARDTII H. Lecomte

Additional & emended bibliography: H. Lecomte, Not. Syst. 2: 215 & 216 (1912) and 2: 393. 1913; Moldenke, Phytologia 19: 37. 1969.

ERIOCAULON ECHINOSPERMUM C. Wright

Additional & emended bibliography: Sauv., Fl. Cub. 162. 1871; Moldenke, Alph. List Cit. 1: 63 & 187 (1946), 3: 930 (1949), and 4: 1144 & 1145. 1949; Moldenke, Phytologia 18: 58. 1968.

The Sauvalle reference cited above is sometimes cited as "1868" (e.g., Phytologia 18: 58. 1968), but, according to the late Dr. J. H. Barnhart, the portion of the work concerned here was not actually published until 1871.

ERIOCAULON ECHINULATUM Mart.

Additional bibliography: Körn., Linnaea 27: 619. 1856; Hance, Journ. Bot. 16: 14. 1878; Maxim., Diagn. Pl. Nov. Asiat. 8: 6 & 11—12. 1893; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Alph. List Cit. 2: 461 (1948) and 3: 892. 1949; Moldenke, Phytologia 19: 37 (1969) and 19: 237. 1970.

Maximowicz (1893) cites Hance s.n. and Sampson s.n. from Canton, China. The type of the species is from Tavoy, Tenasserim, Burma. Hance also cites the Sampson collection (1878) and says "This pretty little species had hitherto only been recorded from Burma".

ERIOCAULON EHRENBORGIANUM Klotzsch

Additional bibliography: Moldenke, Alph. List Cit. 1: 36, 89, 115, 182, & 314 (1946), 2: 370, 459, 461, 476, 494, 526, 549, & 639 (1948), 3: 784, 829, 830, 848, 871, 898, 925, & 961 (1949), and 4: 1003, 1077, 1167, 1171, 1225, & 1241. 1949; Moldenke, Phytologia 19: 37—38, 94, & 95. 1969.

ERIOCAULON EKMANNII Ruhl.

Additional bibliography: Moldenke, Alph. List Cit. 1: 187 (1946) and 4: 1304. 1949; Moldenke, Phytologia 18: 86. 1969.

ERIOCAULON ELEGANTULUM Engl.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 72 & 83. 1899; Moldenke, Phytologia 18: 62. 1968.

ERIOCAULON ELENORAE Fyson

Additional synonymy: Eriocaulon eleonare Fyson ex Inamdar, Bull. Bot. Surv. India 10: 131, sphalm. 1968.

Additional bibliography: Inamdar, Bull. Bot. Surv. India 10: 131. 1968; Moldenke, Phytologia 19: 38. 1969; Moldenke, Biol. Abstr. 50: 4149. 1969.

ERIOCAULON ELICHRYSOIDES Bong.

Additional bibliography: Moldenke, Alph. List Cit. 3: 815. 1949; Moldenke, Phytologia 19: 19 & 38. 1969.

Material of this species has been misidentified and distributed in herbaria under the name E. helichrysoides Kunth. It has been collected in anthesis and fruit in August.

ERIOCAULON EURYPEPLON Körn.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 68. 1899; Moldenke, Phytologia 19: 39. 1969.

ERIOCAULON FENESTRATUM Bojer

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 71 & 81. 1899; Moldenke, Phytologia 19: 39. 1969.

ERIOCAULON FISTULOSUM R. Br.

Additional & emended bibliography: R. Br., Prodr. Fl. Nov. Holl., pr. 1, 1: 255 (1810) and pr. 2, [Isis 1819:] 48. 1819; Moldenke, Phytologia 19: 40. 1969.

ERIOCAULON FRIESIORUM Bullock

Additional bibliography: Hedberg, Symb. Bot. Upsal. 15 (1): 263. 1957; Moldenke, Phytologia 19: 40 & 96. 1969.

ERIOCAULON FULIGINOSUM C. Wright

Additional & emended synonymy: Eriocaulon spaerospermum C. Wright ex Sauv., Anal. Acad. Ci. Habana 7: 716—717. 1871. Eriocaulon fuliginosum C. Wright ex Sauv., Fl. Cub. 163, sphalm. 1871. Eriocaulon sperospermum C. Wright apud Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 879. 1893. Eriocaulon sphaerospermum C. Wright ex Moldenke, N. Am. Fl. 19 (1): 19 & 28, in syn. 1937.

Additional & emended bibliography: Sauv., Anal. Acad. Ci. Habana 7: 715—717 (1871) and 8: 48. 1871; Sauv., Fl. Cub. 161—163. 1871; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 878 & 879 (1893) and pr. 2, 1: 878 & 879. 1946; Moldenke, Alph. List Cit. 1: 3, 63, 120, 186, 187, & 231 (1946), 2: 333, 334, 412, 460, 650, & 651 (1948), 3: 805 & 929 (1949), and 4: 1143, 1210, & 1304. 1949; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 878 & 879. 1960; Moldenke, Phytologia 19: 40. 1969.

Sauvalle's Fl. Cub. reference cited above is sometimes dated "1868", but, according to the late Dr. J. H. Barnhart, this is incorrect for the page in question

ERIOCAULON GIBBOSUM Körn.

Additional bibliography: Moldenke, Alph. List Cit. 1: 223 (1946) 3: 676 & 855 (1949), and 4: 1086, 1113, 1296, & 1297. 1949; Molden-

ke, *Phytologia* 19: 40--41. 1969.

Additional citations: BRAZIL: Goiás: Irwin, Maxwell, & Wasshausen 21632 (N). Mattogrosso: Nienstedt 202 (Ac).

ERIOCAULON GILGIANUM Ruhl.

Additional & emended bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 72 & 84. 1899 [Apr. 7]; Moldenke, *Phytologia* 19: 12 & 41--42. 1969.

ERIOCAULON GLABRIFLORUM Ridl.

This taxon is conspecific with E. truncatum Hamilt. and Ridley's binomial must be reduced to synonymy under E. truncatum, which see.

ERIOCAULON GRACILE Mart.

Martius' name for this taxon is invalid and must be replaced by E. infirmum Steud., which see.

ERIOCAULON GRACILE var. KURZII Fyson

This taxon is now more correctly known as E. infirmum var. kurzii (Fyson) Moldenke, which see.

ERIOCAULON GRACILE var. PUBERULENTUM Moldenke

This taxon is now more correctly known as E. infirmum var. puberulentum (Moldenke) Van Royen, which see.

ERIOCAULON GREGATUM Körn.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 66. 1899; Moldenke, *Phytologia* 19: 42. 1969.

ERIOCAULON GUADALAJARENSE Ruhl.

Additional bibliography: Moldenke, *Alph. List Cit.* 2: 461 (1948) and 3: 829. 1949; Moldenke, *Phytologia* 19: 19 & 43. 1969.

ERIOCAULON GUYANENSE Körn.

Additional bibliography: Fyson, *Journ. Indian Bot.* 2: 320. 1921; Moldenke, *Alph. List Cit.* 3: 975 (1949) and 4: 1203. 1949; Moldenke, *Phytologia* 19: 43. 1969.

The V. C. de Miranda 3072, distributed as "Eriocaulon aff. E. guyanense", is actually E. stramineum Körn.

ERIOCAULON HAMILTONIANUM Mart.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 68. 1899; Ruhl. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 2, 15a: 46. 1930; Moldenke, *Phytologia* 19: 43--44. 1969; M. A. Rau, *Bull. Bot. Surv. India* 10, Suppl. 2: 84. 1969.

ERIOCAULON HETEROCHITON Körn.

Additional & emended bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 70 & 79. 1899; Ruhl. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 2, 15a: 49. 1930; Moldenke, *Phytologia* 19: 43. 1969.

ERIOCAULON HETEROGYNUM F. Muell.

Additional bibliography: Moldenke, *Phytologia* 19: 66 & 68. 1969.

The "R. Br., Fl. Nov. Holl. 1: 38" reference sometimes cited for this taxon appears to be erroneous.

ERIOCAULON HETEROLEPIS Steud.

Additional & emended bibliography: Körn. in Miq., *Prol. Fl. Iap.* 326. 1867; Fyson, *Journ. Indian Bot.* 2: 316 & 320 (1921) and 3: 16. 1922; Moldenke, *Phytologia* 19: 46. 1969; Moldenke, *Biol. Abstr.* 50: 6336. 1969.

Additional citations: INDIA: Kerala: Stocks, Law, &c. s.n. (Br).

ERIOCAULON HEUDELOTII N. E. Br.

Additional bibliography: Moldenke, *Phytologia* 19: 68 (1969) and 19: 246. 1970.

The Jaeger 5247, distributed as E. heudelotii, is actually E. welwitschii Rendle.

ERIOCAULON HILDEBRANDTII Körn.

Additional & emended bibliography: Ruhl. in Engl., *Bot. Jahrb.* 27: 68 & 73. 1899; Ruhl. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 2, 15a: 41, 44, & 49. 1930; Moldenke, *Phytologia* 19: 68. 1969.

ERIOCAULON HONDOENSE Satake

Additional bibliography: Moldenke, *Phytologia* 19: 68—69 (1969) and 19: 249 & 250. 1970.

Additional citations: WESTERN PACIFIC ISLANDS: JAPAN: Honshiu: Togasi 1101 (N).

ERIOCAULON HOOKERIANUM Stapf

Additional & emended bibliography: H. N. Ridl., *Fl. Mal. Penins.* 5: 134 & 135, fig. 218. 1925; Moldenke, *Phytologia* 19: 69 & 88. 1969.

Emended illustrations: H. N. Ridl., *Fl. Mal. Penins.* 5: 134, fig. 218. 1925.

Ridley (1925) says of this species that in the Malay Peninsula it is found on "high mountains among rocks. Pahang, Gunong Tahan on Gunong Riang and the summit of Gunong Tahan at 7100 ft. altitude on dry rocky spots. Distrib. Mount Kinabalu in Borneo". Hoogland & Schodde found it growing in seepage along small creeks at 7500 feet altitude, describing its inflorescence as "white", and reporting for it the common name "abunink".

Additional citations: MELANESIA: NEW GUINEA: Northeastern New Guinea: Hoogland & Schodde 6804 (Ca—1219925).

ERIOCAULON HUMBOLDTII Kunth

Additional bibliography: Moldenke, *Alph. List Cit.* 1: 27 & 132 (1946), 2: 352 (1948), 3: 821, 936, & 975 (1949), and 4: 984 &

985. 1949; Van Donselaar, Meded. Bot. Mus. Rijksuniv. Utrecht 306: 397 & 402. 1968; Moldenke, Phytologia 19: 70, 105, & 109. 1969.

The Rob. Schomburgk 285, distributed as E. humboldtii, is actually a cotype collection of E. tenuifolium Klotzsch.

Additional citations: BRAZIL: Goiás: Irwin, Maxwell, & Wasshausen 21355 (N).

ERIOCAULON INFIRMUM Steud.

Synonymy: Eriocaulon gracile Mart. in Wall., Pl. Asiat. Rar. 3: 29. 1832 [not E. gracile Bong., 1831]. Eriocaulon sexangulare Heyne ex Wall., Numer. List 207, in syn. 1832 [not E. sexangulare Auct., 1903, nor Burm. f., 1826, nor Fyson, 1959, nor L., 1753, nor Mart., 1893, nor Ridl., 1959, nor Willd., 1841]. Eriocaulon sericans Hook. f., Fl. Brit. Ind. 6: 577. 1893 [not E. sericans Heyne, 1832, nor Mart., 1893]. Eriocaulon gracile typica Fyson, Journ. Indian Bot. 2: 264. 1921. Eriocaulon gracile Heyne ex Moldenke, Known Geogr. Distrib. Erioc. 35, in syn. 1946.

Additional & emended bibliography: Kunth, Enum. Pl. 3: 558—559. 1841; Körn., Linnaea 27: 655. 1856; Körn. in Miq., Prol. Fl. Iap. 328. 1867; Moldenke, Alph. List Cit. 4: 1128. 1949; Van Royen, Nov. Guin., new ser., 10: 23, 38—39, & 44. 1959; Moldenke, Phytologia 19: 42 & 44 (1969) and 19: 237. 1970.

Van Royen (1959) has correctly pointed out that the name, E. gracile Mart., which I have hitherto used for this taxon in this series of notes, must be abandoned in favor of E. infirmum Steud. However, he dates the Hooker synonym as "1894", but its correct date of publication is 1893. The E. sericans accredited to Heyne and to Martius are both synonyms of E. wightianum Mart., while E. gracile Bong. is now known as Syngonanthus gracilis var. olivaceus Ruhl.

Eriocaulon sexangulare L. is a valid species, but the homonyms attributed to "Auct." and to Martius are synonyms of E. cinereum R. Br., those credited to Fyson and to Willdenow are E. willdenovianum Moldenke, and that credited to Burman is E. minimum Lam.

ERIOCAULON INFIRMUM var. KURZII (Fyson) Moldenke, comb. nov.

Synonymy: Eriocaulon gracile var. kurzii Fyson, Journ. Indian Bot. 2: 264, pl. 20. 1921.

Additional bibliography: Moldenke, Phytologia 18: 102. 1969.

This taxon has hitherto been discussed by me under the untenable name, E. gracile var. kurzii Fyson

ERIOCAULON INFIRMUM var. PUBERULENTUM (Moldenke) Van Royen

Synonymy: Eriocaulon gracile var. puberulentum Moldenke, Phytologia 4: 128. 1952.

Additional bibliography: Van Royen, Nov. Guin., new ser., 10: 23, 38—39, & 44, fig. 3 K. 1959; Moldenke, Phytologia 18: 102—103. 1969.

Illustrations: Van Royen, Nov. Guin., new ser., 10: 32, fig. 3 K. 1959.

This taxon has hitherto been discussed by me under the untenable name, *E. gracile* var. *puberulentum* Moldenke. Van Royen (1959) has given an amplified description of this variety: "Herb up to 13 cm. Leaves lanceolate-linear, 1.3-2 by 0.1-0.15 cm, long acutely acuminate, 4-7-nerved, fenestrate, glabrous except for long white hairs in the axil. Peduncles 2.5-13 cm, 5-ribbed, twisted, glabrous, sheath 1-2.5 cm, glabrous. Heads obovoid to semiglobose, 2-3 by 2-3 mm, involucrel bracts obovate or squamiform, c. 1.5 by 1.2 mm, obtuse, with few short white hairs in the apical half, floral bracts obovate, c. 1.5 by 1 mm, apiculate, blackish in the upper part and the same area covered with short white or yellowish hairs at outside; receptaculum with long silky white hairs. ♂ Flowers: sepals 3, tubiformly united, the two lateral ones mutually united in the basal part only, the lateral ones boat-shaped, c. 1.5 mm long, rounded at apex, blackish in the upper half, at outside with short white hairs near apex and along crest in the upper third, median sepal lanceolate, c. 1.5 by 0.5 mm, acute or sub-acute, with a few white hairs at apex, blackish in the apical fourth; petals 3, tubiformly united, with a few white hairs at apex, the free lobes of the lateral ones smaller than the median one; stamens 6, the epipetalous longer than the alternipetalous, anthers very slightly blackish. ♀ Flowers: sepals 3, free, lateral ones boatshaped, c. 1.5 mm long, obtuse, at outside with white hairs mainly at apex and along the apical part of the crest, blackish in the upper part, median sepal spatulate, c. 1.5 by 0.3 mm, subacute, with white hairs at apex, blackish in the apical half; petals 3, unequal, with white hairs along the margin and on either side of the apical part except for the extreme tip; ovary 3-celled; style 1 with 3 branches. Seeds globose or ellipsoid, c. 0.5 mm long, with small downwards directed hairs, dark brown. Distribution. Endemic. Local distribution. South Papua, near Lake Daviumbu (Brass 7822). Ecology. On wet grass plains in seasonal areas at low altitudes."

ERIOCAULON INSULARE Ruhl.

Additional bibliography: Moldenke, Alph. List Cit. 1: 63, 186, & 187 (1946) and 2: 651. 1948; Moldenke, Phytologia 18: 243. 1969; Moldenke, Biol. Abstr. 50: 7436 & 7996. 1969.

ERIOCAULON INTERMEDIUM Körn.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 66. 1899; Moldenke, Phytologia 19: 70 (1969) and 19: 234, 236, 237, & 244. 1970.

ERIOCAULON JAPONICUM Körn.

Additional & emended bibliography: Körn. in Miq., Prol. Fl. Iap. 326-327. 1867; Miq., Cat. Mus. Lugd. Bat. 108. 1870; Maxim., Diagn. Pl. Nov. Asiat. 8: 7, 17, & 24. 1893; Moldenke, Phytologia 19: 71. 1969.

ERIOCAULON JOHNSTONII Ruhl.

Additional & emended bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 72, 81, & 82. 1899; Moldenke, Phytologia 18: 247 & 433. 1969.

ERIOCAULON KINABALUENSE Van Royen

Additional bibliography: Moldenke, Phytologia 19: 71--72. 1969.

The Clemenses describe this plant as densely caespitose, growing on wet, cold, bare, windswept summits.

ERIOCAULON KIUSIANUM Maxim.

Additional & emended bibliography: Maxim., Diagn. Pl. Nov. Asiat. 8: 7, 16, & 22--24. 1893; Moldenke, Phytologia 19: 72. 1969.

The type of this species was collected by Carl Johan Maximowicz "in principatu Simabara", Kiushu, Japan, on September 20, 1863. He notes that "Flores capitulaque E. alpestris, a quo tamen foliis crasse nec pellucidis nec fenestratis statim distinguitur".

ERIOCAULON KLOTZSCHII Moldenke

Additional bibliography: Moldenke, Phytologia 19: 72, 101, & 102. 1969; Moldenke, Biol. Abstr. 50: 6336. 1969; Anon., Biol. Abstr. 50 (12): BASIC S.69. 1969.

The Rob. Schomburgk 107, type collection of this species, is actually a mixture, at least in some herbaria, with E. tenuifolium Klotzsch.

ERIOCAULON KLOTZSCHII var. PROLIFERUM (Moldenke) Moldenke

Additional bibliography: Moldenke, Phytologia 19: 72. 1969; Moldenke, Biol. Abstr. 50: 6336. 1969; Anon., Biol. Abstr. 50 (12): BASIC S.69. 1969.

ERIOCAULON KÖRNICKIANUM Van Heurck & Muell.-Arg.

Additional bibliography: Moldenke, Alph. List Cit. 1: 262 (1946), 3: 789 (1949), and 4: 989. 1949; Moldenke, Phytologia 18: 251--253, 370, 380, & 381 (1959) and 19: 232. 1970.

ERIOCAULON KUNTHII Körn.

Additional bibliography: Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Alph. List Cit. 3: 731 & 732. 1949; Moldenke, Phytologia 19: 72. 1969.

ERIOCAULON LANCEOLATUM Miq.

Additional bibliography: Moldenke, Phytologia 19: 73. 1969.

The Strachey & Winterbottom 2, determined as E. lanceolatum by Ruhland in the herbarium of the Jardin Botanique de l'Etat at Brussels, is actually E. truncatum Hamilt.

ERIOCAULON LATIFOLIUM J. Sm.

Additional bibliography: H. Hess, Bericht. Schweiz. Bot. Gesell.

65: 133--137. 1955; Moldenke, *Phytologia* 19: 73. 1969.

The *E. latifolium* credited to Nees (1900) is actually a synonym of *E. woodii* N. E. Br.

ERIOCAULON LEUCOMELAS Steud.

Additional bibliography: Rao & Kumari, *Bull. Bot. Surv. India* 9: 110. 1967; Kammathy, Rao, & Rao, *Bull. Bot. Surv. India* 9:232. 1967; Moldenke, *Phytologia* 19: 74--75, 94, & 100 (1969) and 19: 232. 1970.

Rao & Kumari (1967) state that this species is "common" on laterite soil, flowering in September, and cite their no. 35646 from Andhra Pradesh, India; Kammathy and his associates (1967) describe it as "occasional in swampy area" and cite Barnes s.n. and their number 73807 from Mysore.

ERIOCAULON LIGULATUM (Vell.) L. B. Sm.

Additional bibliography: Moldenke, *Alph. List Cit.* 2: 460 & 598. 1948; Angely, *Fl. Paran.* 16: 51. 1960; Moldenke, *Phytologia* 19: 75. 1969.

ERIOCAULON LINEARE Small

Additional bibliography: Moldenke, *Alph. List Cit.* 1: 42, 139, 242, 257, 293, & 296 (1946), 2: 460, 461, & 513 (1948), 3: 756 & 778 (1949), and 4: 1125, 1135, 1173, & 1178. 1949; Moldenke, *Phytologia* 19: 75 (1969) and 19: 232. 1970.

Godfrey collected this plant on "peaty shores of pond" and "in about 10 inches of water, the substrate very loose soft mucky silt", fruiting in November. Tomlinson found it "In wet margin of lake, wholly inundated except for flowers, in association with Mayaca", flowering and fruiting in June.

The Gillis 6464, distributed as *E. lineare*, is actually *E. compressum* Lam.

Additional citations: FLORIDA: Highlands Co.: Tomlinson 10-6-63 J (Ft--282). Leon Co.: R. K. Godfrey 62886 (Ft--284), 63237 (Ft--283).

ERIOCAULON LINEARIFOLIUM Körn.

Additional bibliography: Moldenke, *Alph. List Cit.* 2: 627 (1948) and 4: 1296. 1949; Moldenke, *Phytologia* 19: 75. 1969.

Additional citations: BRAZIL: Goiás: Heringer 11264 (Rf).

ERIOCAULON LIVIDUM F. Muell.

Additional bibliography: H. Hess, *Bericht. Schweiz. Bot. Gesell.* 65: 150. 1955; Moldenke, *Phytologia* 18: 269. 1969.

ERIOCAULON LONGIPETALUM Rendle

Additional bibliography: Ruhl. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 2, 15a: 49. 1930; Moldenke, *Phytologia* 19: 76. 1969.

ERIOCAULON LUZULAEFOLIUM Mart.

Additional & emended bibliography: Schnitzl., *Iconogr.* 1: pl.

46, fig. 2 & 5. 1845; Steud., Syn. Pl. Glum. 2 [Cyp.]: 270. 1855; Körn., Linnaea 27: 636. 1856; Thwaites & Hook. f., Enum. Pl. Zeyl., pr. 1, 341. 1864; Ruhl. in Engl., Bot. Jahrb. 27: 66. 1899; Moldenke, Alph. List Cit. 2: 461 & 558 (1948) and 4: 1102 & 1189. 1949; Thwaites & Hook. f., Enum. Pl. Zeyl., pr. 2, 341. 1964; Datta & Majumdar, Bull. Bot. Soc. Bengal 20: 38. 1966; Tingle, Check List Hong Kong Pl. 54. 1967; Subba Rao & Kumari, Bull. Bot. Surv. India 9: 188--189. 1967; Moldenke, Phytologia 19: 76 (1969) and 19: 246. 1970.

Tingle (1967) reports this species from Hongkong, where it is known as the "small pipewort". Datta & Majumdar (1966) report that it flowers from November to January in Bengal. Subba Rao & Kumari (1967) state that "This species is near to E. quinquangulare Linn. but differs in having green leaves, green sheaths, longer scapes, non reflexing involucre bracts and glabrous petals in male flowers. It is also allied to E. thwaitesii Koern. but can be distinguished by its longer scapes and oblanceolate petals in female flowers which lack long hairs at the base." They cite Subba Rao 21758 from Andhra Pradesh, India, where they found it to be "common" at 1125 meters altitude. They give its overall distribution as "Central Himalayas, Nepal, Assam, Silhet, Bengal and Burma" and comment that "Hook. f....gives the distribution as throughout India but according to Fyson....this species is restricted to Nepal, Assam, Bengal and Upper Burma."

The E. luzulaefolium var. minus of Martius is E. truncatum Hamilt.

ERIOCAULON MAGNIFICUM var. GOYAZENSE Moldenke

Additional bibliography: Moldenke, Phytologia 19: 77. 1969.

Additional citations: BRAZIL: Goiás: Heringer & Lima 11717 (Rf—isotype).

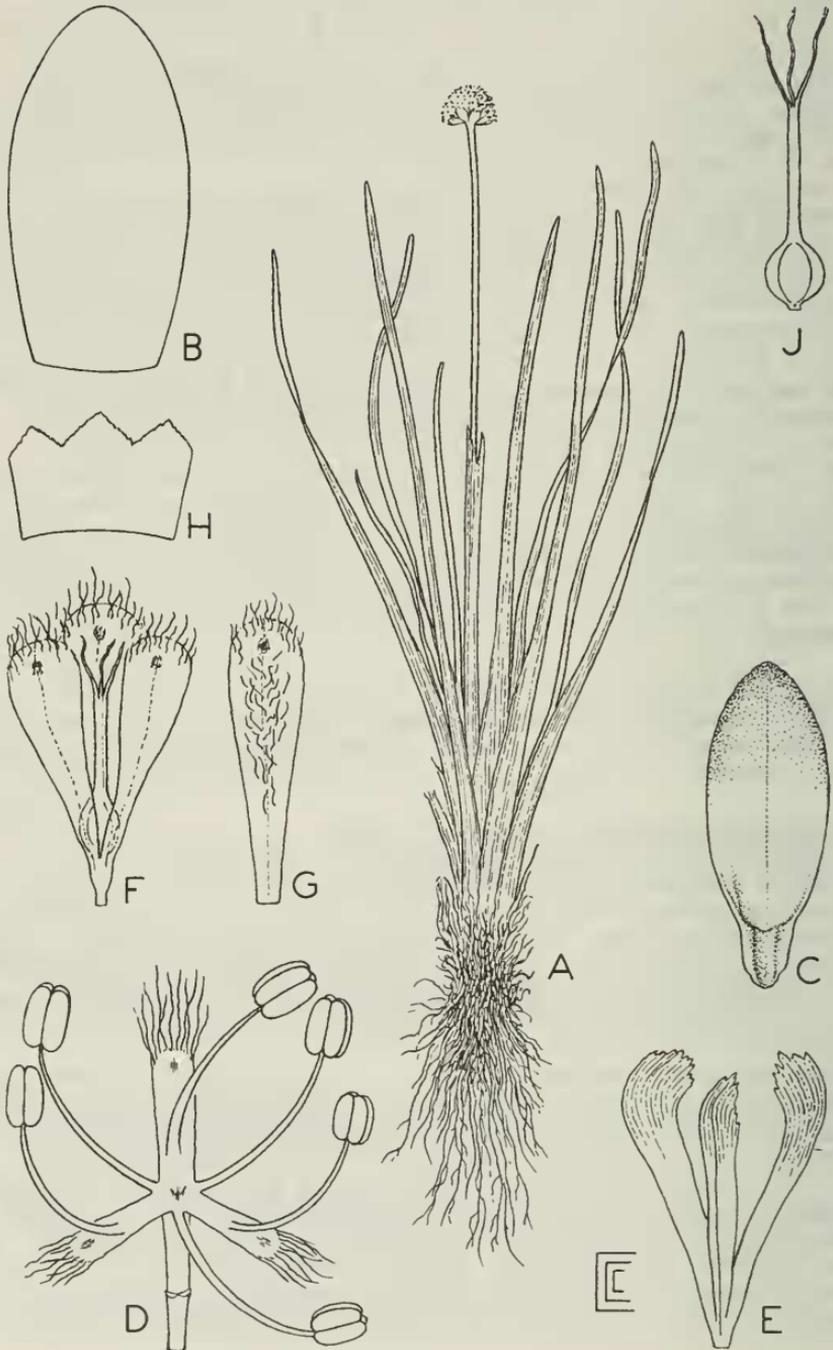
ERIOCAULON MALAISSEI Moldenke, sp. nov.

Bibliography: Moldenke, Phytologia 19: 16. 1969.

Herba aquatica; caulo erecto; foliis erectis tenuibus atroviridibus brunnescentibus 10--15 cm. longis, ad basin ampliatis albido-pellucidisque, usque ad apicem gradatim angustatis, ubique glabris; vaginis 6--6.5 cm. longis laxis glabris obscure fenestratiss, ad apicem bifidis; scapo solitario stramineo 11--12 cm. longo 6-costato glabro; capitulis hemisphaericis albidis ca. 8 mm. latis.

Aquatic herb; stem erect, 4--5 cm. long, completely covered by the sheathing leaves; leaves forming a basal rosette, erect, thin, weak, 10--15 cm. long, dark-green, brunnescent in drying, widely expanded and sheathing at the base and there whitish-pellucid, 2--3 mm. wide above the base and gradually narrowed to the bluntish apex or subacute apex, with numerous parallel veins, fenestrate under a hand lens, very conspicuously so on the expanded base, closely overlapping at the base and completely hiding the stem, glabrous throughout; inflorescence solitary; sheath 6--6.5 cm. long, about 3 mm. wide, uniform, loose, with many parallel

Plate I



veins, more or less fenestrate under a hand lens toward the base, glabrous, bifid at the apex, the two blades lanceolate-ovate, about 5 mm. long, slightly unequal, erect, attenuate-acute at the apex; scape single, stramineous, 11--12 cm. long, about 6-ribbed, glabrous; heads single, hemispheric, whitish, about 8 mm. wide; involucre bractlets firm, elliptic or slightly subobovate, about 3.1 mm. long and 1.5 mm. wide, obtuse at the apex, stramineous below, blackish toward the apex, glabrous; receptacular bractlets more narrowly elliptic, about 2.7 mm. long and 1 mm. wide, blunt at the apex; staminate florets: sepals 3, navicular-cucullate, connate at the base, about 2.5 mm. long, erose; stamens 6, 3 adnate to and 3 alternate with the 3 petals that are connate at the base, very conspicuously white-pilose at the apex, with a gland in the center near the apex; pistillate florets: petals 3, separate, obovate-spatulate, about 2.4 mm. long, 0.5--0.6 mm. wide, rounded or subtruncate at the apex and there very conspicuously white-pilose, with a small black gland at the center near the apex, the sepals united for most of their length, with just a small triangular apical portion free, about 0.9 mm. long in all; pistil about 2.5 mm. long; ovary globose, 0.5 mm. long and wide; stigmas 3. Plate I.

The type of this species was collected by François Malaisse (no. 4489) -- in whose honor it is named -- on the shore of Luanza River, about 5 km. from its source, in the Republic of Congo, at an altitude of 1580 meters, on August 3, 1966, and is deposited in my personal herbarium at Plainfield, New Jersey.

Explanation of Plate I:

A = Habit x 3/4; B = Involucral bractlet x15; C = Receptacular bractlet x15; D = Staminate floret, sepals removed x15; Staminate floret, sepals x15; F = Pistillate floret, sepals removed x15; G = Pistillate floret, petal x15; H = Pistillate floret, sepals x15; J = Gynoecium x15. Drawn by Charles C. Clare, Jr., November 1969.

Mr. R. D. Meikle has examined Malaisse 4489 (type of the species) and 6605, which I sent to the Royal Botanic Gardens at Kew for determination. According to a letter from my friend, Edgar Milne-Redhead, dated June 12, 1969, "he is of the opinion that the two Eriocaulons are conspecific, and that both are Eriocaulon antunesii Engl. & Ruhl. Unfortunately we do not have the type of this species at Kew, and cannot be quite certain of the identification, though everything in the description agrees with your plants. Mr. Meikle also notes that Eriocaulon stoloniferum Welw. ex Rendle is most probably synonymous with E. antunesii. Both species were described from Angolan (Huilla) material, and it is evident that the respective authors were unaware of each other's activities at the time when the species were described."

Actually, I have compared these two collections with an isotype of E. antunesii and find them very different.

Citations: REPUBLIC OF CONGO: Malaisse 4489 (Z--type).

ERIOCAULON MALAISSEI f. VIVIPARUM Moldenke, Phytologia 19: 16, hyponym (1969), f. nov.

Haec forma a forma typica speciei capitulis viviparis et caulis stoloniferis recedit.

This form differs from the typical form of the species in having its flower-heads conspicuously viviparous and in having an elongated basal stem which produces numerous leafy stolons.

The type of the form was collected by François Malaisse (no. 6005) seven km. west-southwest of Poste de Katohufa, at an altitude of 1630 meters, in the Republic of Congo, on November 7, 1968, and is deposited in my personal herbarium at Plainfield, New Jersey.

Citations: REPUBLIC OF CONGO: Malaisse 6005 (Rf--isotype, Z--type).

ERIOCAULON MANNII N. E. Br.

Additional bibliography: Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Phytologia 18: 278. 1969.

ERIOCAULON MARGARETAE Fyson

Additional bibliography: Kammathy, Rao, & Rao, Bull. Bot. Surv. India 9: 232. 1967; Moldenke, Phytologia 18: 278--279. 1969.

Kammathy & his associates (1967) describe this plant as "rare in quiet pools" in Mysore, India, and cite their no. 80401.

ERIOCAULON MELANOCEPHALUM Kunth

Additional bibliography: Sauv., Fl. Cub. 163. 1871; Sauv., Anal. Acad. Ci. Habana 8: 49. 1871; Ruhl. in Engl., Bot. Jahrb. 27: 66. 1899; Moldenke, Alph. List Cit. 2: 352 & 650 (1948), 3: 805 & 975 (1949), and 4: 1143, 1144, & 1209. 1949; Moldenke, Phytologia 19: 77--78 (1969) and 19: 236. 1970.

ERIOCAULON MELANOCEPHALUM var. LONGIPES Griseb.

Additional bibliography: Sauv., Fl. Cub. 163. 1871; Sauv., Anal. Acad. Ci. Habana 8: 49. 1871; Moldenke, Alph. List Cit. 4: 1144. 1949; Moldenke, Phytologia 18: 301. 1969.

ERIOCAULON MERRILLII Ruhl.

Additional bibliography: Moldenke, Alph. List Cit. 2: 462 (1948), 3: 840 (1949), and 4: 1134, 1211, & 1259. 1949; Moldenke, Phytologia 19: 78 (1969) and 19: 246. 1970.

Bartlett describes this plant as having "heads bluish-white" and found it growing on high plateaus, at 1500 meters altitude, flowering in October. Material has been misidentified and distributed in herbaria under the name E. trilobum Buch.-Ham.

Additional citations: INDONESIA: GREATER SUNDA ISLANDS: Sumatra: Bünnemeijer 5203 (Ut--53014).

ERIOCAULON MESANTHEMOIDES Ruhl.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 70 & 79. 1899; Moldenke, Alph. List Cit. 2: 424 (1948) and 3: 977. 1949; Moldenke, Phytologia 18: 303 (1969) and 19: 96. 1969.

ERIOCAULON MEXICANUM Moldenke

Additional bibliography: Moldenke, Alph. List Cit. 3: 830. 1949; Moldenke, Phytologia 18: 303 & 318. 1969.

ERIOCAULON MICROCEPHALUM H.B.K.

Additional bibliography: Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Alph. List Cit. 1: 10, 28, & 32 (1946), 2: 370, 461, 580, & 642 (1948), 3: 660, 805, 830, 831, 848, 872, 898, & 962 (1949), and 4: 1076, 1148, & 1277. 1949; Moldenke, Phytologia 19: 78—79, 94, & 95. 1969.

Tomlinson found this plant growing in paramo vegetation, flowering in August.

Additional citations: COSTA RICA: San José: Tomlinson 6-VIII-65 A (Ft--285).

ERIOCAULON MINIMUM Lam.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 85. 1899; Moldenke, Phytologia 19: 79 (1969) and 19: 243 & 255. 1970.

ERIOCAULON MINUTUM Hook. f.

Additional bibliography: Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Phytologia 19: 79. 1969.

ERIOCAULON MIQUELIANUM Körn.

Additional & emended bibliography: Körn. in Miq., Prol. Fl. Iap. 326 & 327. 1867; Miq., Cat. Mus. Lugd. Bat. 109. 1870; Maxim., Diagn. Pl. Nov. Asiat. 8: 7, 9, & 16--19. 1893; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 44. 1930; Moldenke, Phytologia 19: 69 & 79 (1969) and 19: 250. 1970.

Maximowicz (1893) cites Albrecht s.n., Buerger s.n., Makino s.n., Siebold s.n., and three collections made by himself, all from Japan. He indicates that the species is common in swamps among Drosera rotundifolia and various Cyperaceae, flowering in September and October. He notes that "Inter nostra bracteis flores longe superantibus acuminatis statim cognitum, a Koernicke cum E. heterolepide Stend. ex India orientali comparatum".

ERIOCAULON MISERUM Körn.

Additional bibliography: Maxim., Diagn. Pl. Nov. Asiat. 8: 14. 1893; Ruhl. in Engl., Bot. Jahrb. 27: 66. 1899; Moldenke, Phytologia 19: 79—80. 1969.

ERIOCAULON MODESTUM Kunth

Additional bibliography: Moldenke, Alph. List Cit. 1: 106 (1946) and 3: 876. 1949; Moldenke, Phytologia 19: 80—81 (1969) and 19: 232. 1970.

Additional citations: BRAZIL: Minas Gerais: Irwin, Maxwell, & Wasshausen 19585 (N).

ERIOCAULON NANELLUM Ohwi

Additional bibliography: Moldenke, Phytologia 18: 322. 1969.

Additional citations: WESTERN PACIFIC ISLANDS: JAPAN: Honshiu: S. Suzuki s.n. [Sep. 24, 1951] (Se--141338), s.n. [Aug. 10, 1952] (Se--146902).

ERIOCAULON NANUM R. Br.

Additional & emended bibliography: R. Br., Prodr. Fl. Nov. Holl., pr. 1, 1: 254 (1810) and pr. 2, [Isis 1819:] 48. 1819; Moldenke, Phytologia 19: 82--83 & 94. 1969.

ERIOCAULON NAUTILIFORME H. Lecomte

Additional & emended bibliography: H. Lecomte, Not. Syst. 2: 215 (1912) and 2: 393. 1913; Moldenke, Phytologia 19: 83. 1969.

ERIOCAULON NEESIANUM Körn.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 68. 1899; Fyson, Journ. Indian Bot. 2: 320. 1921; Moldenke, Phytologia 19: 83. 1969.

ERIOCAULON NEPALENSE Prescott

Additional & emended bibliography: Kunth, Enum. Pl. 3: 554--555. 1841; Körn. in Miq., Prol. Fl. Iap. 327. 1867; Moldenke, Alph. List Cit. 2: 618 (1948) and 3: 977. 1949; Moldenke, Phytologia 19: 83. 1969.

Kunth (1841), in his discussion of E. xeranthemum Mart., notes that "E. nepalensi et truncato proximum, licet involucrum radians".

ERIOCAULON NILAGIRENSE Steud.

Additional bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 66. 1899; Sebastine & Vivekanathan, Bull. Bot. Surv. India 9: 165 & 183. 1967; Moldenke, Phytologia 19: 83 (1969) and 19: 246. 1970.

Sebastine & Vivekanathan (1967) describe this plant as abundant at 1675 meters altitude in moist places of the extensive grasslands of Kerala, India, flowering in June, and cite their no. 16461.

ERIOCAULON NIPPONICUM Maxim.

Additional & emended bibliography: Maxim., Diagn. Pl. Nov. Asiat. 8: 5 & 9--10. 1893; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 49. 1930; Moldenke, Alph. List Cit. 2: 492 (1948) and 4: 1168, 1178, & 1288. 1949; Moldenke, Phytologia 19: 79 & 83 (1969) and 19: 250. 1970.

Maximowicz (1893) bases this species on three collections: (1) Bisset s.n. from somewhere in Japan, (2) Maximowicz s.n. from the vicinity of Yokohama, and (3) Savatier 1362 from wet places at Hakone, Japan. He describes the plant as being rather frequent about Yokohama, flowering there in September. He notes "Habitus E. Miqueliani, sed involucrum brevius phyllis obtusis et flores dimeri".

ERIOCAULON NOVOGUINEENSE Van Royen

Additional bibliography: Moldenke, *Phytologia* 19: 83—84. 1969.

Collectors have found this plant growing at altitudes of 7000 to 11,050 feet, in open alpine places. Brass describes the leaves as stiff and fleshy, the flower-heads pale-brown, and the plant "common in closely packed masses on edge of lake and on marshy slopes".

Additional citations: MELANESIA: NEW GUINEA: Northeastern New Guinea: M. S. Clemens 5584 (N), 9368 (N).

ERIOCAULON NUDICUSPE Maxim.

Synonymy: Eriocaulon, sp. dubia Miq., *Cat. Mus. Lugd. Bat.*

146. 1870. Eriocaulon sp. incerta Miq. *apud Maxim., Diagn. Fl. Nov. Asiat.* 8: 19, in syn. 1893.

Additional & emended bibliography: Miq., *Cat. Mus. Lugd. Bat.* 146. 1870; Maxim., *Diagn. Fl. Nov. Asiat.* 8: 7 & 19—20. 1893; Moldenke, *Phytologia* 19: 84. 1969.

Maximowicz (1893) seems to base this species on three collections: "E. sp. incerta Miq. *cat. mus. Lugd. Bat.* 146 et 109 leg. Siebold. *Japonia* (hb. Ito. Keiskei! vol. II. n. 61. *jap. Tsiku tōsō* in *Mus. Lugd. Bat.*"

ERIOCAULON ODORATUM Dalz.

Additional bibliography: Ruhl. in *Engl., Bot. Jahrb.* 27: 68. 1899; Ruhl. in *Engl. & Prantz, Nat. Pflanzenfam.*, ed. 2, 15a: 46. 1930; Moldenke, *Phytologia* 19: 84 (1969) and 19: 248. 1970.

ERIOCAULON OFFICINALE Körn.

Additional bibliography: Körn. in Miq., *Prol. Fl. Iap.* 327. 1867; Ruhl. in *Engl. & Prantl, Nat. Pflanzenfam.*, ed. 2, 15a: 50. 1930; Moldenke, *Phytologia* 18: 360—361. 1969.

ERIOCAULON PALLIDUM R. Br.

Additional & emended bibliography: R. Br., *Prodr. Fl. Nov. Holl.*, pr. 1, 1: 254 (1810) and pr. 2, [*Isis* 1819:] 47—48. 1819; Ruhl. in *Engl., Bot. Jahrb.* 27: 68. 1899; Moldenke, *Phytologia* 18: 365. 1969.

ERIOCAULON PALUSTRE Salzm.

Additional bibliography: Körn. in Miq., *Prol. Fl. Iap.* 327. 1867; Ruhl. in *Engl. & Prantl, Nat. Pflanzenfam.*, ed. 2, 15a: 44. 1930; Moldenke, *Phytologia* 19: 85. 1969.

ERIOCAULON PARADOXUM Moldenke

Additional bibliography: Moldenke, *Alph. List Cit.* 2: 370 (1946) and 4: 1255. (1949); Moldenke, *Phytologia* 18: 367—368 (1969) and 19: 23. 1969.

ERIOCAULON PARKERI B. L. Robinson

Additional & emended bibliography: Britton & Br., *Illustr. Fl.*, ed. 2, pr. 1, 1: 454, fig. 1141 (1913) and 3: 575 (1913), pr. 2,

1: 454, fig. 1141 (1936) and 3: 575 (1936), and pr. 3, 1: 454, fig. 1141 (1943) and 3: 575. 1943; Moldenke, *Alph. List Cit.* 1: 43, 57, 60, 94, 115, 122, 164, 170, 178, 197, 199, 248, 270, 292, 295, & 296. 1946; Britton & Br., *Illustr. Fl.*, ed. 2, pr. 4, 1: 454, fig. 1141 (1947) and 3: 575. 1947; Moldenke, *Alph. List Cit.* 2: 361, 412, 449, 455, 459--461, 476, 477, 492, 494, 496, 524, 529, 568, & 641 (1948), 3: 671, 699, 707, 709, 722, 736, 741, 753, 754, 773, 794, 805--807, 822, 870, 877, & 964 (1949), and 4: 985, 1085, 1119, 1135, 1141, 1168, 1176, 1189, 1198, 1204, 1222, 1227, 1252, & 1296. 1949; Lehr, *Bull. Torr. Bot. Club* 96: 721. 1969; Moldenke, *Phytologia* 19: 86 (1969) and 19: 232. 1970.

Emended illustrations: Britton & Br., *Illustr. Fl.*, ed. 2, pr. 1, 1: 454, fig. 1141 (1913), pr. 2, 1: 454, fig. 1141 (1936), pr. 3, 1: 454, fig. 1141 (1943), and pr. 4, 1: 454, fig. 1141. 1947.

Lehr (1969) states that this species has not been seen in Rockland County, New York, for the past fifteen years.

ERIOCAULON PARVUM Körn.

Additional & emended bibliography: Körn. in *Miq.*, *Profl. Fl. Iap.* 327. 1867; *Miq.*, *Cat. Mus. Lugd. Bat.* 109. 1870; Maxim., *Diagn. Pl. Nov. Asiat.* 8: 6, 10, 11, & 14--16. 1893; Moldenke, *Phytologia* 19: 86 & 104. 1969.

Maximowicz (1893) cites for this species only the original collection and Makino s.n. from Shikoku, Japan. He comments: "E nostratibus E. sexangulare proximum, ceterum ab autore E. trilobo Ham. approximatum. A priore, quocum statura et habitu omnino convenit, statim discernitur capitulis nigrescentibus dorso bractearum albo-villosulis". Obviously his concept of E. sexangulare is what we now know as E. cinereum R. Br.

ERIOCAULON PELLUCIDUM Michx.

Additional bibliography: N. L. Britton, *Man.*, pr. 1, 237 (1901), pr. 2, 237 (1902), pr. 3, 237 (1905), and pr. 4, 237. 1907; Britton & Br., *Illustr. Fl.*, ed. 2, pr. 1, 1: 454, fig. 1140 (1913) and 3: 575 & 625 (1913), pr. 2, 1: 454, fig. 1140 (1936) and 3: 575 & 625 (1936), and pr. 3, 1: 454, fig. 1140 (1943) and 3: 575 & 625. 1943; Moldenke, *Alph. List Cit.* 1: 4, 6, 8, 11, 15, 18, 19, 21, 29--35, 38, 40--43, 46, 56, 59, 61, 63, 71, 82, 88, 90, 91, 94, 98, 99, 104, 107, 109, 111, 112, 115, 118, 122, 123, 129, 130, 139, 142, 143, 148, 149, 152, 153, 160, 163, 169, 174, 176, 177, 182, 192--194, 197, 199, 200, 204--206, 209, 212--214, 220, 224--226, 229, 235, 239, 242, 244, 245, 247--249, 255, 257, 262, 270, 271, 276--284, 287, 288, 290, & 292--296. 1946; Britton & Br., *Illustr. Fl.*, ed. 2, pr. 4, 1: 454, fig. 1140 (1947) and 3: 575 & 625. 1947; Moldenke, *Alph. List Cit.* 2: 404, 406, 412, 413, 449, 453, 455, 460, 461, 473, 476--478, 480, 481, 492--494, 496, 506, 507, 514, 524, 530, 536, 538, 555, 568--570, 580, 581, 583, 585, 587, 609, 610, 614, 617, 630, 631, 634, 638, & 641 (1948), 3: 671, 698--700, 706, 707, 713, 719, 721, 722, 728, 738--740, 743--745, 750, 752--754, 760, 771--773, 783, 794, 800, 803, 806, 807, 811, 812, 823, 827, 828, 832, 842,

843, 852, 858, 870, 877, 878, 880, 890—892, 900, 911, 916, 926, 927, 931, 941, 948, 969, 971—973, 976, & 977 (1949), and 4: 986, 987, 997, 998, 1001, 1002, 1004, 1012, 1015, 1016, 1081, 1084, 1097—1099, 1111, 1112, 1118, 1119, 1121, 1123, 1125, 1127, 1135—1137, 1140, 1141, 1145, 1151, 1155, 1162, 1167—1169, 1173, 1176—1178, 1180, 1181, 1189, 1191, 1192, 1197—1199, 1203, 1204, 1209—1211, 1217, 1218, 1221—1223, 1125—1227, 1229, 1232, 1235, 1237, 1239, 1240, 1244, 1246, 1247, 1251, 1252, 1255, 1260, 1261, 1289, 1292, 1294, 1296, & 1297. 1949; Moldenke, Biol. Abstr. 50: 6336. 1969; G. W. Prescott, How to Know Aquat. Pl. 133, 134, & 164, fig. 146. 1969; Moldenke, Phytologia 19: 86—87, 101, 102, 105, & 109 (1969) and 19: 230. 1970.

Additional & emended illustrations: Britton & Br., Illustr. Fl., ed. 2, pr. 1, 1: 454, fig. 1140 (1913), pr. 2, 1: 454, fig. 1140 (1936), pr. 3, 1: 454, fig. 1140 (1943), and pr. 4, 1: 454, fig. 1140. 1947; G. W. Prescott, How to Know Aquat. Pl. 133, fig. 146. 1969.

Moore says that this species is "common in most of our lakes and rivers, stems up to a foot or so depending on depth of water" and reports the vernacular name "white buttons" in Ontario.

Additional citations: ONTARIO: County undetermined: M. I. Moore s.n. [Deep River, August 23, 1963] (Ft—6288).

ERIOCAULON PICTUM Fritsch

Additional & emended bibliography: H. Hess, Bericht. Schweiz. Bot. Gesell. 65: 138—145 & 157, pl. 8, fig. 3, 4, 7, & 8. 1955; Moldenke, Phytologia 18: 388—391. 1969.

ERIOCAULON PILIFLORUM Ruhl.

Additional & emended bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 71 & 80—82. 1899; Moldenke, Phytologia 18: 391—392. 1969.

ERIOCAULON POLYCEPHALUM Hook. f.

Additional bibliography: Ellis, Swaminathan, & Chandrabose, Bull. Bot. Surv. India 9: 15. 1967; Moldenke, Phytologia 18: 395—396 & 435 (1969) and 19: 75. 1969.

Ellis & his associates (1967) cite their no. 18616 from Kerala, India.

ERIOCAULON PSEUDOCOMPRESSUM Ruhl.

Additional bibliography: Sauv., Fl. Cub. 163. 1871; Moldenke, Alph. List Cit. 1: 3 & 186 (1946), 2: 651 (1948), and 4: 1144 & 1304. 1949; Moldenke, Phytologia 18: 424. 1969.

In Sauvalle's work (1871) this plant is definitely misidentified as E. gnaphalodes Michx. — the binomial is not published there by Sauvalle as a new binomial as claimed by Ruhland (1900). Also, according to the late Dr. J. H. Barnhart, the date of publication of this part of Sauvalle's work was 1871, not "1868" as claimed by some authors.